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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/508,745	09/21/2004	Robertus Adrianus Maria Wolters	NL02 0251 US	8946
24738	7590	11/30/2005	EXAMINER	
PHILIPS ELECTRONICS NORTH AMERICA CORPORATION INTELLECTUAL PROPERTY & STANDARDS 1109 MCKAY DRIVE, M/S-41SJ SAN JOSE, CA 95131			ARENA, ANDREW OWENS	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 11/30/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No. <b>10/508,745</b>	Applicant(s) <b>WOLTERS ET AL.</b>	
	Examiner <b>Andrew O. Arena</b>	Art Unit <b>2811</b>	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 October 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of claims 1-7 in the reply filed on 10/24/2005 is acknowledged.

### ***Drawings***

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the:

“security layer is present at the second side of the substrate, which security layer leaves exposed the bond pad regions or any metallization for access thereto” recited in claim 3, and the

“antiprobe means” recited in claim 4,

must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate

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changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Claim Objections***

3. Claim 4 is objected to because of the following informalities: line 2 should read "bond pad regions are protected" instead of "bond pad regions protected". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Davis (US 6,137,173) – hereinafter Davis.

6. Regarding claim 1, Davis discloses (Fig 15-17) a semiconductor device (col 4 ln 37) comprising:

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a substrate (400; also Fig 10: 230 or Fig 14: 320) with a first (430) and an opposed second (460) side,

at which first side a plurality of transistors and interconnects is present (col 3 ln 31-38, col 4 ln 10-14), which are covered by a protective security covering (250),

which device is further provided with bond pad (410) regions,

characterized in that the protective security covering comprises a substantially non-transparent and substantially chemically inert security coating (col 2 ln 64 - col 3 ln 3; Davis does not limit his security coating to any particular material, therefore Davis's disclosure encompasses all well-known security coating materials, including substantially non-transparent materials), and

the bond pad regions are accessible from the second side of the substrate (510).

7. Regarding claim 2, Davis discloses (Fig 15):

the bond pad regions are present on the first side (430, which is taken to include the sidewalls and bottom of trenches 440 in side 430) of the substrate, and

the substrate is a silicon substrate (col 3 ln 12, 28-33), that is patterned (440, 510) as required for access to the bond pad regions.

8. Regarding claim 3, Davis discloses (Fig 17) a security layer (540) is present at the second side of the substrate, which security layer leaves exposed any metallization (530) for access to the bond pad regions.

9. Regarding claim 4, Davis discloses (Fig 17) the bond pad regions are protected against probing (broadly interpreted as contacting with some probe tip) with antiprobe means (layer 250 prevents contact with bond pads 410).

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10. Regarding claim 5, Davis does not limit his security coating layers to any particular number or material (col 5 ln 5-12), therefore his disclosure encompasses all well-known security coating layers, including a layer of  $\text{TiO}_2$ .

11. Regarding claim 6, Davis discloses the security coating is formed of multiple alternate layers (col 5 ln 5-12, col 3 ln 55-61), which alternate layers are sensitive to different etchants (different layers are inherently sensitive to different etchants).

12. Regarding claim 7, Davis discloses (Fig 17) a carrier (250) comprising a semiconductor device according to claim 1.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Bearinger et al. (US 6,144,106) teaches all claimed aspects of the security coating, notably: non-transparent (col 5 ln 28, 41); chemically inert (col 2 ln 13-20);  $\text{TiO}_2$  (col 6 ln 46); and multiple alternate layers sensitive to different etchants (col 2 ln 13).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew O. Arena whose telephone number is (571) 272-5976. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie Lee can be reached on (571) 272-1732. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**EDDIE LEE**  
**SUPERVISORY PATENT EXAMINER**  
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